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W. W. ROWE

CAR LINER

Filed April 28, 1926

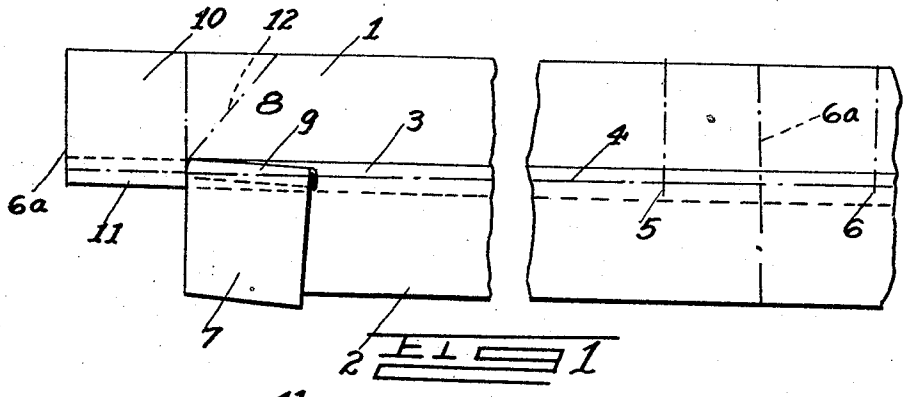


FIG 1

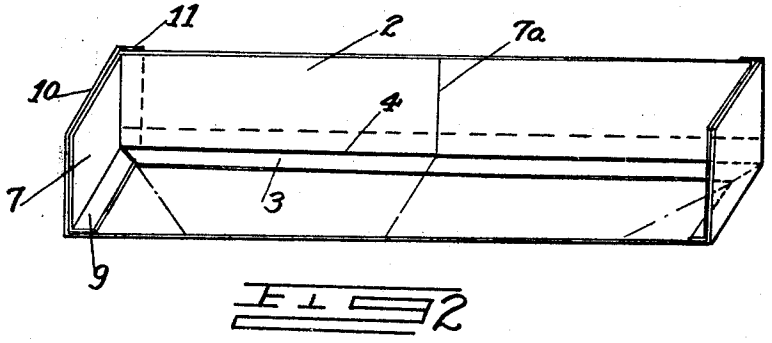


FIG 2

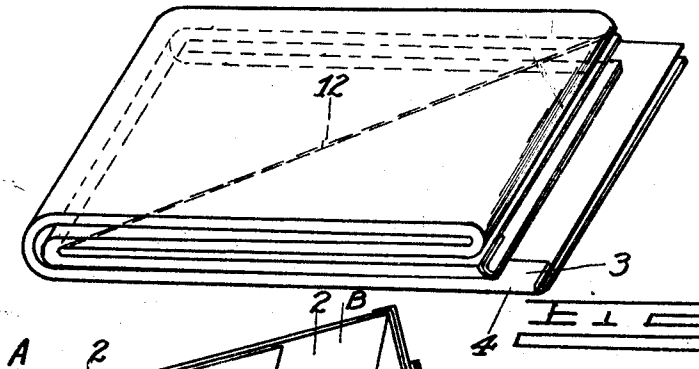


FIG 3

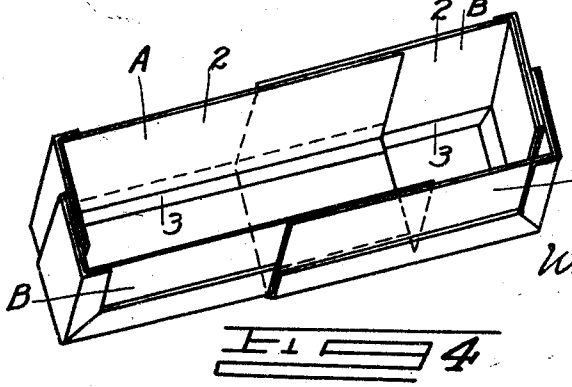


FIG 4

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UNITED STATES PATENT OFFICE.

WILLIAM WALLACE ROWE, OF CINCINNATI, OHIO, ASSIGNOR TO THE PAPER SERVICE COMPANY, OF LOCKLAND, OHIO, A CORPORATION OF OHIO.

CAR LINER.

Application filed April 28, 1926. Serial No. 105,263.

My invention relates to the production of paper liners for freight cars, or analogous vehicles.

In its object, my invention relates to the production of a car liner by a simple operation, with a resultant structure presenting a double thickness at all angles, with no lapped seams in the interior which will serve as a ledge or pocket for catching grain or other granular substance shipped in the liner. From the process point of view my liner can be made of two continuous webs of paper fed between a pasting mechanism that is inhibited periodically. The liner can, however, be made up by hand, and its structure which permits of machine pasting of rights and lefts without any grain catching seams, is the valuable feature of my invention from the process point of view.

As in the usual paper car liner, my structure is made up to present sections having a base part, an end wall and a side wall, with two rights and two lefts to a set so that the four pieces can be placed into a car, lapping each other and forming a complete paper liner.

Among the other advantages of my invention is the fact that there are but two pieces of paper in each section, without sacrifice of double thickness at all angles.

I accomplish my object by that certain construction and arrangement of parts to be hereinafter more specifically pointed out and claimed.

In the drawings:

Figure 1 is a plan view illustrating the mode of construction.

Figure 2 is a perspective of two sections of liner, a right and left, with line of separation marked.

Figure 3 shows the same section folded up.

Figure 4 is a perspective of a complete liner, slightly out of scale to illustrate more clearly the points involved.

In a typical method of manufacture strips of paper 1 and 2 are fed from a roll, through a pasting machine, which pastes the two pieces together with a seam 3, which is later to be folded and may be scored on the median line 4. In a liner having four and a half foot high walls, to cite an example, the pasting will be inhibited for distances of 9 feet as between points 5 and 6, there being a length of pasted portion between each 9 feet equal to the length of two sections.

The strips are cut clear across as on line 6^a, through the center of the pasting interruption. The double length pieces are cut in half as at 7^a, before erection, leaving two sections with four and one half foot unpasted ends, on opposite ends of the two sections. This is done to allow for fitting the device into the car. Also where the lining is only desired in the ends of the car, the sections will not be made so long as where they are to lap each other.

In forming the built up sections the free end 7 of sheet 2 is turned back upon its main body to the position shown in Fig. 1 and the exposed face is then daubed with paste.

The free end 10 of sheet 1 is then folded toward section 2 along line 12 and the ends 7 and 10 are thus brought into register with each other and pasted together.

The portion 11 of flap 10 then extends beyond the edge of flap 7. The portion 11 is then daubed with paste and bent under flap 7, and secured to the body portion 2.

As so constructed piece 1 forms the base of the section, and the lap or seam 3 will then extend as in Figure 2, out over the base, so as not to catch grain. The portion 9 of the flap 7 also extends out across the base in the same manner. The upstanding seam will have the portion 11 on the outside of the structure and the angles throughout will be of double material pasted together. The end walls will be double and the corner at the V fold 8 will be particularly strong. This corner is formed when the flap 10 is folded on line 12, as has been described.

The same operation repeated on the other half of the double length portion will give a like structure, except that the end wall will be at the opposite end. Thus it is evident that instead of quarter sections the liner could be made of half sections each with two end walls, a side wall and a base. It is the practice generally to make quarter sections. Each pair of rights and lefts will, however, serve for one half of the freight car. To illustrate this the sections A are rights and the sections B are lefts in Figure

4. The arrangement by overlapping these sections as in Figure 4 is the usual practice in car liners.

In Figure 3 is indicated a method folding the individual sections. This fold is made by forming the preliminary fold along the line 12, thus doubling the base in a triangle whereupon a rectangular body is formed. This body is then doubled and rolled up into a compact bundle.

If desired the four sections may be pasted together in the relationship shown in Figure 4 and then folded by bending in the side walls at each end to form triangles, thus forming a rectangular body; as will be evident without further illustration. Also one or both halves of the liner could be formed with a single side wall, and base.

There is no slitting back of pasted bodies and no additional strips added for reinforcement in my structure.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A car liner section formed of two pieces of paper or other fabric folded and secured so as to form a base, side and end walls, with a lapped seam about all of the base angles in which all interior laps are secured on the base, as distinguished from the side or end walls, and a full lapped seam reinforcing the vertical angle on the outside.

2. A car liner formed of paper or other fabric having a base, side and end walls, with a lapped seam about all of the base angles in which the interior laps are secured on the base, as distinguished from the side or end walls, said liner comprising four sections each having a side wall and an end wall and a base portion, each side wall having the interior end wall integral therewith so as to avoid vertical joints, and a full lapped seam reinforcing the vertical angle on the outside.

3. A car liner formed of paper or other fabric having a base, side and end walls, with a double thickness about all of the base angles in forming which the interior laps are secured on the base, as distinguished from the side or end walls, with the angle between the side and end walls having a lapped seam with the lap on the outside of the corner.

4. A car liner comprising sections each having side, end and base portions forming at least one corner and having double lap seams at all angles of juncture between walls, said sections each formed of but two strips of paper or other fabric.

5. A car liner comprising sections each having side, end and base portions forming at least one corner and having double lap seams at all angles of juncture between walls, said sections each formed of but two strips of paper or other fabric, the corners of said sections at opposite ends of the same side wall of the car having thin bodies folded oppositely from each other thus forming lefts and rights.

6. A car liner comprising sections each having side, end and base portions forming at least one corner and having double lap seams at all angles of juncture between walls, said sections each formed of but two strips of paper or other fabric, the corners of said sections at opposite ends of the same side wall of the car having thin bodies folded oppositely from each other thus forming lefts and rights, and having internal lap seams along the entire base angle, the overlapping portion pasted down on the base.

7. The method of forming car liner sections which consists in uniting strips of paper by lapping and pasting them, folding them so that the ultimate base of the liner sections will always have the overlap upon them and folding the end walls by alternating a clockwise and counterclockwise folding of flaps of said paper strips.

8. The method of forming car liner sections which consists in uniting strips of paper by lapping and pasting them, folding them so that the ultimate base of the liner sections will always have the overlap upon them and folding the end walls by alternating a clockwise and counterclockwise folding of flaps of said paper strips, said sections formed into quarter sections, by cutting across the united sections, either before or after folding said clockwise and counterclockwise folded ends.

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